

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

Claim 1 (currently amended): A method for communicating, comprising the steps of:

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- (1) ~~selecting~~ identifying a radio frequency band from the electromagnetic (EM) spectrum as a band of interest;
 - (2) ~~selecting~~ identifying a channel within said band of interest as a channel/band combination;
 - (3) ~~causing an input filter device to filter the~~ filtering said EM spectrum thereby passing said channel/band combination;
 - (4) ~~down-converting said channel/band combination to create a down-converted signal~~ aliasing said channel/band combination according to an aliasing signal, said aliasing signal having an aliasing frequency, said aliasing frequency being a function of a clock signal, thereby generating a down-converted signal including said channel/band combination; and
 - (5) ~~causing an output filter to filter~~ filtering said down-converted signal ~~to create a,~~ thereby passing said channel as a filtered down-converted signal.

Claim 2 (cancelled)

Claim 3 (currently amended): The method of claim ~~[[2]]~~ 1, wherein said down-converted signal is an intermediate frequency signal.

Claim 4 (currently amended): The method of claim [[2]] 1, wherein said down-converted signal is a baseband signal.

Claim 5 (currently amended): The method of claim [[2]] 1, wherein said clock signal has a clock frequency, the method further comprising the step of:

(6) adjusting ~~the~~ said clock frequency for said channel/band combination so that said aliasing frequency is suitable for down-converting said channel/band combination.

Claim 6 (original): The method of claim 1, further comprising the step of:

(6) decoding said filtered down-converted signal to create a decoded down-converted signal.

Claim 7 (currently amended): A system for communicating, comprising:

a controller that operates under the direction of a user, and that issues a first command signal and a second command signal;

a controller signal generator to generate a control signal according to said first command signal; and

a unified down-converting and filtering (UDF) module to filter and down-convert one or more input signals based on said control signal and according to said second command signal, said UDF to alias said filtered input signal according to an aliasing signal, said aliasing signal having an aliasing frequency, said aliasing frequency being a function of a clock signal, and thereby output a channel filtered and down-converted signal.

Claim 8 (original): The system of claim 7, further comprising a decoder to generate a decoded output signal from said channel filtered and down-converted signal.

Claim 9 (original): The system of claim 7, wherein said control signal generator is a voltage controlled oscillator.

Claim 10 (original): The system of claim 7, wherein one of said one or more input signals is selected as a selected input signal and said UDF module comprises:

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(1) a frequency translator to under-sample said selected input signal to produce an input sample of a down-converted image of said selected input signal, and to delay said input sample; and

(2) a filter, comprising:

- (a) at least a portion of said frequency translator;
- (b) at least one delay module to delay instances of an output signal; and
- (c) an adder to generate an instance of said output signal from at least one of said delayed input samples.

Claim 11 (original): The system of claim 10, wherein said frequency translator comprises a down-convert and delay module to under-sample said selected input signal according to said control signal, wherein a frequency of said control signal is equal to a frequency of said selected input signal plus or minus a frequency of said down-converted image, divided by n , where n represents a harmonic or sub-harmonic of said input signal.

Claim 12 (original): The system of claim 8, wherein said controller issues a third command signal, and wherein said decoder operates according to said third command signal.

Claim 13 (currently amended): A method of communicating, comprising the steps of:

(1) specifying identifying one or more radio frequency bands from the electromagnetic spectrum as bands of interest;

(2) specifying identifying one or more channels within each of said bands of interest as channel/band combinations;

(3) specifying identifying one of said channel/band combinations as a monitored channel/band combination;

(4) causing an input filter to operate with said monitored channel/band combination, and filtering an input signal using said input filter, to create a filtered signal having a frequency within said monitored channel/band combination;

(5) ~~down-converting said filtered signal to create a down-converted signal;~~ aliasing said filtered signal according to an aliasing signal, said aliasing signal having an aliasing frequency, said aliasing frequency being a function of a clock signal, thereby generating a down-converted signal; and

(6) causing an output filter to operate with said monitored channel/band combination, and filtering said down-converted signal using said output filter, ~~and~~ thereby generating a filtered down-converted signal.

(7) ~~causing said output filter to generate a filtered down-converted signal from said down-converted signal.~~

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Claim 14 (cancelled)

Claim 15 (currently amended): The method of claim ~~[[14]]~~ 13, wherein said clock signal has a clock frequency, the method further comprising the step of:

~~(8)~~ (7) adjusting ~~the~~ said clock frequency for said monitored channel/band combination so that said aliasing frequency is suitable for down-converting said channel/band combination.

Claim 16 (currently amended): The method of claim 13, further comprising the steps of:

~~(8)~~ (7) selecting a decoder to be a selected decoder, said selected decoder being configured to operate with said monitored channel/band combination; and

~~(9)~~ (8) using said selected decoder to create a decoded down-converted signal from said filtered down-converted signal.

Claim 17 (currently amended): The method of claim 13, further comprising the steps of:

~~(8)~~ (7) repeating steps (3) through ~~(7)~~ (6).

Claim 18 (original): The method of claim 13, wherein said down-converted signal is an intermediate frequency signal.

Claim 19 (currently amended): The method of claim ~~[[16]]~~ 13, wherein said down-converted signal is a baseband signal.

Claim 20 (currently amended): A system for communicating, comprising:

an input filter module comprised of one or more input filters to filter one or more input signals so as to generate one or more filtered input signals;

a universal frequency translator to down-convert at least one of said one or more filtered input signals to generate a down-converted signal, said universal frequency translator comprising means for aliasing said filtered input signal according to an aliasing signal, said aliasing signal having an aliasing frequency, said aliasing frequency being a function of a clock signal, thereby generating said down-converted signal; and

an output filter module comprised of one or more output filters to filter said down-converted signal.

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Claim 21 (original): The system of claim 20, further comprising a control signal generator that outputs a control signal, wherein said universal frequency translator operates according to said control signal.

Claim 22 (original): The system of claim 21, wherein said control signal generator is a voltage controlled oscillator.

Claim 23 (original): The system of claim 21, further comprising a decoder module comprised of one or more decoders, wherein said decoder module decodes said filtered down-converted signal to generate a decoded output signal.

Claim 24 (original): The system of claim 23, further comprising a controller that operates under the direction of a user, said controller to issue at least a first command signal, a second command signal, a third command signal, a fourth command signal, and a fifth command signal, wherein

said input filter module operates according to said first command signal,

said universal frequency translator operates according to said second command signal,

said control signal generator operates according to said third command signal,

said output filter module operates according to said fourth command signal, and

said decoder module operates according to said fifth command signal.

Claim 25 (original): The system of claim 20, wherein said down-converted signal is a baseband signal.

Claim 26 (original): The system of claim 20, wherein said down-converted signal is an intermediate frequency signal.

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